U.S. Department of the Interior – Bureau of Reclamation
SAN LUIS DRAINAGE
FEATURE RE-EVALUATION & EIS

Issue Summary Report

May 2002

Throughout the Re-evaluation process, Reclamation has encouraged input from agency representatives and interested stakeholders. Reclamation continues to assimilate comments and utilize suggestions to shape and form this study. The following is a brief summary of the issues and comments that Reclamation has received at meeting and in written comments.

Public Meetings and Workshops

Reclamation hosted an interagency scoping workshop, two public scoping meetings, and a round of interagency and stakeholder workshops to collect comments and suggestions from individuals, organizations, and local and agency representatives. The interagency scoping workshop was held in Sacramento on October 25, 2001, from 8:00 a.m. to 4:00 p.m. at the Federal Building. Reclamation hosted two public scoping meetings in Fresno on November 14, 2001, from 10:00 a.m. to 12:00 p.m. at the Piccadilly Inn University and in Concord on November 15, 2001, from 1:30 p.m. to 3:30 p.m. at the Concord Hilton Hotel. Reclamation conducted an interagency workshop in Sacramento on March 5, 2002 from 9:30 a.m. to 4:30 p.m. at the Federal Building and a stakeholder workshop in Santa Nella on March 6, 2002 from 9:00 a.m. to 4:00 p.m. at the Ramada Inn – Mission de Oro. Reclamation also organized a meeting with interested representatives from environmental groups unable to attend the stakeholder workshop. This meeting was held in Oakland on March 13, 2002 from 10:00 a.m. to noon at Environmental Defense.

Summary of Issues and Comments

The attending public and agency representatives presented concerns and questions. The groups contributed many ideas and comments for Reclamation to review. Reclamation also presented a collection of important areas for comment. The following is a brief synopsis of the major issues and concerns.

MAJOR ISSUES AND CONCERNS

Definition of Drainage Service. Reclamation should expand the definition of drainage service to include on-farm, in-district management alternatives, including land retirement.

Land Retirement and Agricultural Practices. Many participants described land retirement as the best solution to the drainage problem. Many other participants said that land retirement does not allow for continued agricultural production and does not address drainage problems for lands remaining in production.

Impacts of Treatment and Disposal of Drainage Water. Reclamation must consider all of the potential impacts to the Delta, San Francisco Bay, groundwater, and all other potential treatment/disposal sites.

Project Schedule. The proposed project schedule is not acceptable. Reclamation should provide drainage service sooner than the current schedule describes. Some participants suggested that Reclamation implement a flexible or progressive approach to providing drainage service – implement drainage management solutions first and then provide drainage service.

Regulatory Compliance. Reclamation should review and comply with all current regulations and required permits. Reclamation should go beyond existing regulations to consider potential future regulations and recent scientific analyses of potential impacts (e.g., selenium).

Stakeholder Participation. A consensus-driven, stakeholder process can identify potential alternatives that are acceptable to all parties, including interim actions for mitigating agricultural drainage problems.

Below is a summary of the written and oral comments Reclamation received as of May 1, 2002.

SUMMARY OF ISSUES AND COMMENTS

Drainage Service and Drainage Management

Definition of Drainage Service

Many participants suggested that Reclamation's definition of drainage service was not adequate to provide comprehensive solutions to the drainage management problem in the San Luis Unit. These participants stated that drainage service should include drainage management approaches, in addition to treatment and disposal options. Participants suggested that Reclamation should focus on early implementation of drainage management options, which could be more cost effective and could address up to 90% of the drainage problem.

Drainage Management Options and Alternatives

Several participants suggested that drainage management actions should be optimized and included in all alternatives. Several people noted that local management actions have been successful in several parts of the Central Valley. Reclamation should revisit drainage management options identified in the San Joaquin Valley Drainage Plan. Participants suggested the following specific options and approaches for drainage management:

- Drainage Water Volume Reduction
  - Irrigation source control
  - Integrated on-farm drainage management systems
  - Reduction targets, incentives, and technical assistance
  - Land retirement
- Drainage Water Reuse
- Groundwater Management

Several participants suggested that one alternative should include the optimal combination of non-discharge alternatives, such as drainage minimization, land retirement, land fallowing, water transfers, sequential drainage use on-farm, and alternative land management.

Other participants stated that drainage management approaches alone are insufficient to address the drainage service need. Drainage management that only balances the salt load in the soil will result in increased salts in the soil and declining agricultural productivity. Specifically, alternatives should address the need to remove the salt from the soil and dispose of that salt, thereby preserving the agricultural productivity of the land. Reclamation should not spend more time and money investigating irrigation improvements. Integrated On-Farm Drainage Management (IFDM) Systems have worked locally, but have not fully addressed the salt problem. Reclamation would have to demonstrate improved salts removal and mechanisms for regionalizing these programs. Groundwater management programs may only transfer the salt problem from the root zone to the groundwater. Improved water use efficiency over the last several years may mean that substantial reduction in drainage cannot be achieved through additional irrigation water source control.

Participants emphasized that alternatives must be flexible to be effective in various regions. The characteristics of the land within the San Luis Unit varies greatly from one end to the other, therefore management methods must be flexible.

Land Retirement

Many participants stated that land retirement and land fallowing should be a major component of alternatives to address the drainage problem because they could address a significant portion of the problem and land retirement programs are already in place. One participant stated that one alternative should consider exclusively land retirement, alternative land management, and dry-land farming. One participant pointed out that previous court cases have rationalized that an agricultural producer should find another use for the land if the current use results in the continuos discharge of large masses of contaminants to water systems.

Other participants noted that Reclamation should clarify how much of the drainage problem could be addressed by existing and proposed land retirement programs and how many acres of land need drainage service. One participant noted that the source of drainage problems is not solely agricultural lands – wildlife refuges, grasslands, and other natural resource areas contribute to the problem.

Participants also noted that land retirement is a viable option for the farmers provided a fair and reasonable deal is negotiated for purchase of the properties.

Drainage Treatment and Disposal

Geographical Area Serviced

Many participants emphasized that Reclamation should extend the service area boundaries. Within the San Joaquin Valley, many agricultural producers are challenged with the same drainage issues. Participants suggested for Reclamation initially assist those within the San Luis Unit and then to extend service efforts to include those in need beyond the San Luis Unit.

Treatment Options

Many participants suggested that Reclamation consider the full range of treatment options and not limit the analysis to evaporation ponds and some form of out-of-valley disposal. Potential treatment options identified by participants include: use of drain water in power generating solar ponds, on-site water treatment, reverse osmosis, on-farm technologies, micro/nano filtration, use for power plant cooling, and separation of drain water into usable components (water and various salt-residue products).

Several participants commented that traditional evaporation systems similar to Kesterson Reservoir should be avoided at all costs due to their impacts to aquatic and bird species, and the resources required for their eventual clean-up. Other participants commented that Reclamation is engaged in a number of pilot/experimental programs (Grasslands Bypass) that have been met with varying levels of success but should still be considered and perhaps enhanced as part of this project.

Some participants cited tightening water quality standards in the San Francisco Bay-Delta and San Joaquin River for selenium and boron, and stressed the need for more efficient in-valley water treatment prior to considering any disposal option. One participant suggested that drainage water be treated on a regional basis like other types of wastewater. One suggestion was to review research completed by Westlands Water District and Fresno State University on anaerobic bacterial selenium removal.

Some participants suggested that Reclamation evaluate an alternative that focuses on drainage management for 10 years before selecting options for salt disposal or utilization (similar to Alternative 4 in the 1991 Draft EIS). Another alternative should incorporate all of the drainage minimization and management options listed above and waste utilization alternatives for the remaining salts and water.

Disposal Options

Many participants suggested that Reclamation should consider a full range of disposal options, including out-of-valley disposal to the Delta, San Joaquin River, or the ocean). Supporters of out-of-valley disposal stated that the drainage solution must address salts removal from the valley. Some participants noted that the ocean is the appropriate place to return the salts.

Participants opposed to out-of-valley drainage options argued that transporting selenium-laden water to the Delta would exacerbate existing water quality problems. They cited similar difficulties regarding salts and discharge to the San Joaquin River. Participants noted that the state is likely to raise the discharge standards for selenium, boron, and salt making river or Delta disposal options increasing infeasible. Participants noted that if the drainage water were treated to a standard where it could be discharged to the San Joaquin River or the Delta, it would become more useful to valley farmers and would be reused rather than discharged.

Other participants suggested deep-well injection, ocean disposal, and salt and selenium utilization as potential disposal strategies that Reclamation should consider. Some participants suggested Reclamation look at the drainage water as a resource and not as a problem. Useful applications for the salts may exist in a variety of markets. Participants stressed that Reclamation should actively pursue potential markets for these materials.

Ocean Outfall

Participants expressed concern for the potential locations presented. Suggestions included encouraging Reclamation to explore completed studies to evaluate other potential outfall sites. Additionally, participants suggested Reclamation coordinate project efforts with existing pipelines and operations.

Delta Outfall

Many participants expressed concern for the potential impacts to an impaired Bay-Delta system. Participants emphasized concern for the concentration of salts and selenium in discharged material. Some participants suggested placing a Delta Outfall closer to the ocean, specifically Carquinez Straits, to encourage more tidal mixing and flushing.

Participants noted the strict regulations that exist for the Delta. A system with a Delta Outfall will be subjected to numerous permits and regulations.

In-Valley Disposition / Landfill

Many participants also supported development of a comprehensive, integrated solution that includes reuse, reverse osmosis treatment, selenium treatment, evaporation ponds, and a landfill. Most participants also believed that reuse options should be part of all alternatives.

Participants expressed concern for use of evaporation ponds because of the large area required for ponds and the potential access to wildlife. Participant suggested Reclamation review methods to cover ponds to protect wildlife and look into potential energy generation.

Other Suggestions

Participants suggested Reclamation research potential partners that could use drain water or other by-products to encourage reuse and share project costs. Participants also encouraged Reclamation to coordinate efforts with existing drainage operations and pilot programs. Some participants suggested that Reclamation consider transporting the drain water to the Salton Sea.

Environmental Impacts

Impacts to the Bay-Delta

Several participants suggested that environmental protection and restoration should be a goal of drainage management. Several participants stated opposition to the discharge of drainage water into San Francisco Bay and/or the Delta. Participants suggested that not enough is known about the effects of drainage water on the Bay/Delta environment, and that there are unknown water quality and human health impacts for the whole region. Participants acknowledged that the entire system is in need of a solution.

Selenium and Bio-accumulation

Participants noted that various potential sources of contamination exist throughout the San Francisco Bay/Delta system. Among those potential contaminants is selenium. Many participants expressed concern for the potential immediate and cumulative impacts that discharges with high concentrations of selenium may have on fish, wildlife, and the broader Bay/Delta watershed area. One stakeholder noted that a significant threat to the aquatic ecosystem of the Lower San

Joaquin River and Bay-Delta exists due to California's climate and hydrology matched with the properties of selenium. Some participants noted that selenium discharges at any level would be unacceptable.

Participants emphasized that Reclamation should consider the best available scientific research in evaluating disposal alternatives and allow a margin of compliance to accommodate future changes in regulations. Regulations have changed considerably through the years. For example, discharges to Kesterson Reservoir were within EPA's regulations at the time. One suggestion was for Reclamation to use the *U.S. Geological Survey Open-File Report 00-416, Forecasting Selenium Discharges to the San Francisco Bay-Delta Estuary: Ecological Effects of a Proposed San Luis Drain Extension* for updated information on impacts from selenium discharges.

Costs and Economic Impacts

Costs and Financing

Several participants suggested that Reclamation should include updated costs for land purchases for facilities and rights-of-way and for decommissioning costs for evaporation ponds. Some participants questioned the economic feasibility of this project and requested information on the financial responsibilities for implementing the drainage program. Some participants suggested that Reclamation should compare the costs for drainage service to crop values. Participants also requested that Reclamation disclose the actual cost to farmers (with and without the federal subsidy program) in the economic analysis. The cost information should include the total cost to farmers for drainage service compared to drainage management.

Economic Impacts

Participants emphasized that Reclamation must look at the economic impacts to surrounding communities that may occur from failing to implement a solution or from the costs of a solution. Reclamation should also examine the economic impacts that could occur during the planning process – agricultural producers are in need of immediate solutions to sustain current practices.

One participant suggested Reclamation also look at the economic value of alternative uses for land taken out of agricultural production. Reclamation should complete an economic / allocation efficiency evaluation of water used in irrigation and the various other uses that same resource could be allocated to.

Process and Schedule

Process

Several participants stated that Reclamation should take steps to implement interim drainage service solutions sooner than the completion of the Feature Re-evaluation. One participant noted that the interim coordination Reclamation described in the Plan of Action would not provide drainage service.

One participant suggested that the scope of the EIS should include all aspects and impacts associated with the water supply and its movement that results in a need for drainage service.

Participants requested that Reclamation provide a list of members, affiliation, and expertise of the Planning and Coordination Action Team.

Schedule

Participants stated that the project schedule is inadequate. Some participants indicated that farmers need immediate, near-term and long-term drainage service to maintain and sustain agricultural production. Several participants stated that Reclamation's Plan of Action describes studies to be completed, but does not specifically describe the timing for providing drainage service as the court ordered. They questioned if the court considered Reclamation's Plan of Action to be "prompt" service. Several participants suggested that Reclamation implement findings from previously completed studies to expedite the project schedule instead of completing new studies. Others also requested Reclamation list the staff and resources available to work on this project and any potential consultant support to ensure that Reclamation meets the schedule.

Some participants noted the permits and regulations that need to be addressed in developing project alternatives. Participants also noted that agency and public review of all of these issues might affect the project planning and implementation schedule.

Public Involvement

Participants suggested that Reclamation use a variety of outreach materials to reach the widest audience. Also, Reclamation should schedule public involvement activities between project milestones to retain individual engagement. Other participants noted that future phases of drainage planning provide larger roles for other agencies and professional disciplines. Participants noted their appreciation for the workshops and meeting hosted by Reclamation and stated interest in future involvement. Other participants noted that Reclamation should not devote resources to public outreach efforts because these efforts would divert from the court order to deliver prompt drainage service.

Participants suggested that Reclamation consider the potential public response to alternatives in the feasibility analysis. Participants also noted the importance of involving Native American groups to ensure the Environmental Justice aspect of alternatives.

The tables below lists participants who attended meetings and contributed oral and/or written comments.

Table 1
Approximate Meeting Attendance

Meeting	Date	Number of Participants
Agency Scoping Meeting	10/25/01	33
Public Scoping Meeting – Fresno	11/14/01	58
Public Scoping Meeting – Concord	11/15/01	25
Agency Workshop	3/5/02	34
Stakeholder Workshop	3/6/02	31

Table 2 Oral Comments Submitted at Scoping Meetings	
Name	**Affiliation**
Irene VanTasser	Triple T Farms
Terry Young, Ph.D.	Environmental Defense
John Kopchik	Contra Costa County Community Development Department
Mark Holmes	The Bay Institute
David Nesmith	Environmental Water Caucus
Alex Hildebrand	South Delta Water Agency
Roy Senior	Zim Industries, Inc.
Matt Reeve	Private citizen
Alan Wilhelmi	California Striped Bass Association
Lisa Holm	Contra Costa County Water District
Ed O'Neill	O'Neill Farms
Richard Harriman	California Nat. Res. Foundation
Nettie Drake	B&N Enterprises
Chris White	CCID
Al Dingle	Westlands Water District
Daniel Kippen	Smiland & Khachigian
Dudley Silvera	Private citizen
Vashek Cervinka	Department of Water Resources
John Brooks	U.S. Fish & Wildlife Service

Table 3 Written Comments Submitted	
Name	**Affiliation**
Terry Young, Ph.D., (Consulting Scientist) Thomas Graff, Regional Coordinator Angela Sherry, Resource Policy Analyst	Environmental Defense
Russ Freeman	Westlands Water District
Lori Clamurro	Delta Protection Commission
Patrick Porgans	Patrick Porgans & Associates
Mathew Reeve	CA Department of Food and Agriculture
Walt Shannon	State Water Resources Control Board
Laura Fujii	Environmental Protection Agency
Daniel J. O'Hanlon	Kronick, Moskovitz, Tiedemann & Girard
Gary Bobker John Kopchik Lisa M. Holm Terry Young, Ph.D. (Consulting Scientist)	Bay Institute Contra Costa Cty Community Development Dept. Contra Costa Water District Environmental Defense
W.E. Loudermilk, Regional Manager	CA Department of Fish and Game
Andrew Gordus	CA Department of Fish and Game
Terry Young, Ph.D. (Consulting Scientist) Angela Sherry, Resource Policy Analyst	Environmental Defense
Dave Ciapponi, Assistant General Manager	Westlands Water District

Table 3 Written Comments Submitted	
Name	**Affiliation**
Steve Chedester, Executive Director	San Joaquin River Water Authority
John Kopchik,	Contra Costa Cty Community Development Dept.
Jose I. Faria, P.E., Chief Special Investigations Branch	Department of Water Resources, San Joaquin District
William M. Smiland	Smiland and Khachigian
Irene VanTasser	Triple T Farms
Dink and Mary Allen	Private citizens
Felix E. Smith	Private citizen
R. Berry Stewart, Chairman	Trinity County Board of Supervisors
Russ Freeman, Supervisor of Resources Management	Westlands Water District
Roy F. Senior, Jr.	Zim Industries, Inc.
Alex Hildebrand	South Delta Water Agency
Theresa Presser	U.S. Geological Survey
Curt Zimmerer	Zim Industries, Inc.
Joseph McGahan	Summers Engineering, Inc.
Dudley Silveria	Private citizen
Dennis Falaschi	Panoche Drainage District
Alene Taylor	Private Citizen
A.L. Fourchy	San Joaquin Valley Drainage Authority
Susan Masten	Yurok Tribe
Acting Field Supervisor	U.S. Fish and Wildlife Service
Wayne Verrill	State Water Resources Control Board